

Although the British Museum specimen from Makassar has been regarded as the type of *H. rufa* since 1870, and may be considered to have been made a lectotype by Sharpe (ICZN, 1985: art. 74), it would still be of interest to know what other material Wallace had when he described *H. rufa*. Judging by his title, one would assume that he had at least one specimen from the Sula Islands. To this I can only say that hitherto I have failed to trace any. The Makassar specimen is the only type of *H. c. rufa* known to me.

In conclusion: the examination of the lectotype of *Halcyon rufa* in the British Museum has confirmed its provenance Makassar, and therefore supports the nomenclature used in recent years by Eck, Hubbard & duPont, Mees, etc., with *H. c. rufa* in Celebes, *H. c. pelingensis* on Peling, and *H. c. sulana* in the Sula Islands.

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Address: G. F. Mees, Rijksmuseum van Natuurlijke Historie, Postbus 9517, 2300 RA Leiden, Holland.

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The red-tailed buzzards of Zaïre

by M. Louette

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The Red-necked Buzzard *Buteo auguralis* breeds during the dry season in western and west-central Africa (including Uélé in Zaïre: January–March, Chapin 1932), and migrates during the rainy season towards the north (Brown 1970). In this country, contrary to Brown's map and Lippens & Wille's (1976) statement "assez commune dans presque tout le Zaïre", it is only definitely known from the extreme north and extreme west (Schouteden 1948, 1950, Snow 1978), being absent from most of Kivu and Eastern (now Upper Zaïre) provinces and the whole of Shaba and Kasai, these regions lacking to a large extent breeding buzzards (see position of regions on maps in Louette 1989, 1990). Also, P. Herroelen

never saw a buzzard during ten years of residence (1950–1960) in the southern (forested) part of Equateur province; Chapin (1932) gives only Lukolela ($1^{\circ}07'S, 17^{\circ}11'E$; no date, "not common") as a locality outside the "main" range. South of the Equator, in the west of Zaïre (Kwelu), Wille (in Lippens & Wille 1976) saw *auguralis* from January to March, supposing them to be migrants; at that period they should be nesting in the north (unless these were immatures), but I think these birds belong to another population. It is noteworthy that the species definitely breeds in extreme western Zaïre, since a young bird, just out of the nest (sited in a tree near a river), was collected for the KMMA at Tumba, Lower Zaïre province ($5^{\circ}31'S, 14^{\circ}36'E$), 2 September 1938. Menegaux & Van Saceghem (1918) had already mentioned its breeding in this region, but because they may have confused two species (?), better proof was necessary. *Buteo auguralis* is also proven to breed in western Angola (bird with primaries not completely developed from Duque de Braganza, no date, Barboza du Bocage 1881; another "just able to fly" at Malandje, Hartert & Neumann 1914; downy young and large nestlings found in October in Bié province, Traylor 1963), but the status of the species, though widespread in the northwestern part, is inaccurately described in that country (cf. Snow 1978, Pinto 1983, Dean *et al.* 1988). The dated adult specimens from Lower Zaïre are from March, July and October. According to Bouet (1955), Petit collected the species at Landana (Cabinda) in April, June and September and Dean (1978) saw it occasionally in Cabinda in August. Specimens from western Gabon are from July ("assez abondant en saison sèche", Malbrant & Maclatchy 1949) and from June and August (Rand *et al.* 1959). All these are far more likely to be local breeding birds in this well-forested area ('Mayombe'), rather than migrants from the northern population.

Somewhat to the north in the equatorial forest, near Makokou in eastern Gabon, Brosset & Erard (1986), over a long period, saw this buzzard only four times, all in December–January. Quite likely the populations in the two hemispheres are segregated, the one in the southern hemisphere breeding only in the Mayombe–Angola region, during the dry season, dispersing somewhat to the surrounding areas (e.g. eastern Gabon and Kwelu, Lukolela in Zaïre) with the rains, at the opposite time of year to the larger northern population. It is certain that the species breeds in the northern rim of the equatorial forest in Cameroon, not very far from the southern breeding range. Nestlings were taken by Serle (1950) near Mount Manengouba (at *c.* $5^{\circ}05'S, 9^{\circ}50'E$) from rock nests in March, and Germain *et al.* (1973) had a juvenile from Batouri ($4^{\circ}26'S, 14^{\circ}22'E$) also from March, in the dry season in the northern hemisphere.

In any case, there seem to be no differences in measurements or plumage characteristics between birds of both hemispheres. Published measurements include those of 12 specimens in Bannerman (1930) and wing and weight means and ranges in Thiollay (1977) from 8 specimens of Côte d'Ivoire; a selection from these two sources figures in Brown *et al.* (1982). Table 1 gives my measurements of adult ('red-tailed') specimens from the two regions in Zaïre. There is a dimorphism among the adults of both regions, two plumage types being present: (1) with a completely dark

TABLE 1
Measurements in mm of adult Zaire specimens of *Buteo auguralis*

Region	Sex (from label)	Wing chord	Tail	Culmen from cere	Hind claw
Lower Zaïre					
dark breast	—	337.0	173.0	—	—
dark breast	f	354.0	189.5	22.0	25.5
streaked breast	f	—	188.0	21.5	22.0
streaked breast	f	360.0	193.5	22.5	23.0
streaked breast	—	349.0	177.0	24.0	23.0
Uélé, Ituri					
dark breast	f	355.0	182.5	23.5	24.5
streaked breast	f	356.0	185.0	24.0	25.0
streaked breast	m	351.5	180.5	22.0	24.0

brown breast, and (2) with brown streaks on white on the breast. In this restricted sample no differences in size appear, nor do the label data (but these may not be reliable) suggest that the plumage types correspond to the two sexes. Based on the moult sequence in specimens towards a red tail, birds having this latter character are surely adult; hence the plumage illustrated as immature in Brown *et al.* (1982) is in fact a type 2 adult. The immature is streaked on the belly, like a type 2 adult, but has a brown, indistinctly barred, not a red tail, and no reddish on the head or on the edges of feathers on the mantle (see also description in Hartert & Neumann 1914). Probably the smaller population in the southern hemisphere is the result of recent immigration from the north, during a period when the equatorial forest was not a formidable barrier (this buzzard is not really a species of deep forest, cf. Thiollay 1975 and the scarcity of records in forest areas in Zaïre, Gabon and Cameroon). There are other examples of species which have apparently spread in the same way: *Dendropicos goertae* (Louette & Prigogine 1982), *Batis minor* (Louette 1987), *Crinifer piscator* (see Snow 1978).

In the KMMA collection, an Augur Buzzard *Buteo augur* taken at Banana (6°00'S, 12°24'E; at the coast) in March 1951 was found, incorrectly placed under the previous species (confirmed by A. H. James). J. Mesmaekers, the collector, worked only in that area, so I accept the locality as the first record from western Zaïre of this (normally resident) mountain bird, about 1000 km from its nearest known haunts in Angola (*pace* Traylor 1963, Snow 1978); it must have been a vagrant. This bird is not adult, because although its tail is reddish, with a terminal brown band and some brown barring, the other plumage characters point towards an immature. Dorsally, its mantle is pale brown with some rufous edging; ventrally, it is white from the lower breast downwards (the upper breast has some brown streaks). The thighs are white with some pale rufous. The under wing-coverts are white, unlike *B. rufofuscus*. This immature plumage is not quite matched by any of the numerous specimens from eastern Zaïre, Rwanda and Burundi in KMMA, but in measurements (in mm: wing chord left 436, right 440, tail 215, culmen from cere 26.5,

hind claw 28.5, tarsus 83) it agrees completely with *augur* (see Brooke 1975).

In Zaïre, except for the mountains on the eastern border, where the species is common (Schouteden 1948, 1950), there are only the three specimens that Verheyen (1953) took in the Upemba Park (Shaba). As mentioned under the previous species, there is no resident buzzard in much of lowland Zaïre, confirmed by the fact that *B. augur* also does not normally occur in the neighbouring areas of Zambia (Benson *et al.* 1971, in part *contra* Benson & White 1957), and in Angola is found only locally in the mountains of the southwest (Pinto 1983).

Both red-tailed buzzard species are thus allopatric but since they are so different in size and ecology they are no vicariants. The brown-tailed Mountain Buzzard *B. oreophilus* is the only other breeding *Buteo* in tropical Africa, occurring in the same general range—mountains—as *B. augur*; James (1986) supposes it to be taxonomically related to *B. auguralis*. The absence of the nearly cosmopolitan genus *Buteo* from much of southern Zaïre (where one would expect *B. auguralis*, a lowland bird, to occur) is paralleled e.g. in such birds as *Falco tinnunculus* (Louette 1989), the genus *Agapornis* and the grey touracos *Corythaixoides/Crinifer* (see Snow 1978). One wonders if insufficient coverage of this region by ornithologists is the reason, or if these absences are real and due to a common factor. The southern peri-forest woodlands do lack a number of species that exist north of the Equator and they also possess species without counterparts in the north, resulting from their different zoogeographical history.

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Address: M. Louette, Koninklijk Museum voor Midden-Afrika, B-3080 Tervuren, Belgium.

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BOOKS RECEIVED

Alerstam, T. 1990. *Bird Migration*. Pp. vii + 420, 137 text-figures. Cambridge University Press. ISBN 0 521 32865 9 hardback. £55.00. 25 × 19 cm.

An updated translation of a book published in Sweden in 1982, this is an unusual and excellent survey of bird migration. It is unusual in its strong emphasis on fundamentals, and the spirit of enquiry which pervades every chapter. Thus it begins by discussing the basic causes of migration, chief of which are the amount of heat from the sun which falls on different parts of the earth's surface and the 23.5° tilt of the earth's axis, which causes the seasons. From this basis, a series of 10 chapters, constituting nearly half of the text, discusses the breeding and winter quarters of the main ecological groups of birds, based on their feeding habits, and the factors which have led to the evolution of the resulting patterns of migration. This is followed by another series of 9 chapters on "the migratory journey", dealing with such topics as flight speed and height, different methods of flight, fat as fuel, the effect of weather and wind direction, and the hazards of migration. These chapters, far from being dry summaries, include detailed treatment of dozens of interesting examples. A final shorter section of 3 chapters deals very adequately but in less detail with the experiments which have been directed at solving the difficult, and still largely unresolved, problems of orientation and navigation.

The coverage is world-wide, and the treatment is authoritative, as would be expected from an author who has wide experience of original research on bird migration based at Lund, a leading university for ecological studies. The illustrations (largely maps and diagrams; no bird portraits) are clear and useful, and the translation very good, only occasionally betraying evidence that it is a translation. Thoroughly recommended.

Baldwin, Peter J. & Meadows, Brian S. *Birds of Madinat Yanbu Al-Sinaiyah and its Hinterland*. Pp. 74. Royal Commission for Jubail and Yanbu. No price given.

An account of the natural and man-made habitats of the new industrial city of Madinat Yanbu Al-Sinaiyah, on the Red Sea Coast, 350 km north of Jeddah, and observations of